Sqirvy-AI : Command Line Agents

VERSION 0.0.1-alpha is under active development and will change frequently

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What If You Could String Together Some AI Queries To Make Something Happen? And Use A Differet LLM For Each Step? And Do It From The Terminal Instead Of A UI?

Imagine you are setting up some DevOps for a project, and you need a simple way to make queries to LLM providers for use in a command line program. You don't want to have to copypasta from a web app or a python script. Or, you want to automate tasks like code review or web scraping using LLMs.

How about this: have a set of simple command line programs that perform various fixed queries to LLM providers. You can use them to automate tasks like code review, testing, and deployment. They could be used in CI/CD pipelines, or as part of a devops workflow. And each step could use a different LLM, whatever was suitable for the options.

What if you could chain multiple queries in a shell command or script, and get a single response?

In addition, this project includes a simple client SDK in **pkg/sqirvy** that can connect to the supported providers and models and execute a query. This SDK can be used to write your own programs that need to connect to AI's with a very simple query function. For more involved interfacing to AI you would probably want to use LangChain, one of the native AI SDK's or a direct HTTP API. But if you just need your program to provide basic AI support, this SDK makes that easy. The SDK provides two functions, **NewClient** and **QueryText** that can access OpenAI, Gemini, Anthropic, LLama DeepSeek. And just for fun (and example), each client implementation (in pkg/sqirvy) uses a different method to execute queries.

That's what this project is all about.

GitHub Repo

LLMs Supported In This Release

- https://www.anthropic.com/api
  - claude-3-7-sonnet-20250219
  - claude-3-5-sonnet-20241022
  - claude-3-7-sonnet-latest
  - claude-3-5-sonnet-latest
  - claude-3-5-haiku-latest
  - claude-3-haiku-20240307
  - claude-3-opus-latest
  - claude-3-opus-20240229
- https://ai.google.dev/gemini-api/docs gemini-2.0-flash gemini-1.5-flash gemini-1.5-pro gemini-2.0-flash-thinking-exp
- https://platform.openai.com/docs/overview
  - gpt-4o
  - gpt-4o-mini
  - gpt-4-turbo
  - o1-mini
  - o3-mini
- https://docs.llama-api.com/quickstart
- llama3.3-70b
- deepseek-r1 (tested with Meta Llama provider)

How It Works

The main program is **sqirvy**, which is a command line utility that can perform AI queries. **sqirvy** is setup to take prompt input from stdin, perform a query to a specified LLM and send the results to stdout. Because it uses **stdin | sqirvy | stdout**, it is possible to chain together a pipeline, using the same of different models and LLM providers at each step. In cases where a query needs multiple inputs, it supports taking file names and urls as arguments and combines them as additional context.

```
Sqirvy-cli is a command line tool to interact with Large Language Models
(LLMs).
   - It provides a simple interface to send prompts to the LLM and receive
responses
   - Sqirvy-cli commands receive prompt input from stdin, filenames and
URLs. Output is sent to stdout.
   - This architecture makes it simple to pipe from stdin -> query ->
stdout -> query -> stdout...
   - The output is determined by the command and the input prompt.
   - The "query" command is used to send an arbitrary query to the LLM.
   - The "plan" command is used to send a prompt to the LLM and receive a
plan in response.
   - The "code" command is used to send a prompt to the LLM and receive
source code in response.
```

```
   - The "review" command is used to send a prompt to the LLM and receive a
code review in response.
   - Sqirvy-cli is designed to support terminal command pipelines.

Usage:
  sqirvy-cli [command] [flags] [files| urls]
  sqirvy-cli [command]

Available Commands:
  code        Request the LLM to generate
  completion  Generate the autocompletion script for the specified shell
  help        Help about any command
  models      list the supported models and providers
  plan        Request the LLM to generate a plan.
  query       Execute an arbitrary query to the LLM
  review      Request the LLM to generate a code review .

Flags:
      --default-prompt string   default prompt to use (default "Hello")
  -h, --help                    help for sqirvy-cli
  -m, --model string            LLM model to use (default "gpt-4-turbo")
  -t, --temperature int         LLM temperature to use (0..100) (default
50)

Use "sqirvy-cli [command] --help" for more information about a command.
```

Example Pipeline Script

THere is an example bash script that illustrates the type of actions you can take with the **sqirvy** program to perform multi-step operations in a pipeline.

scripts/tetris


```
#!/bin/bash

# this script does the following:
# - creates a directory called tetris
# - uses gemini-1.5-flash to create a design for a web app
# - uses claude-3-5-sonnet-latest to generate code for the design
# - uses  gpt-4o-mini to review the code
# - starts a web server to serve the generated code

design="create a design specification for a web project that is a \
    simple web app that implements a simple tetris game clone.       \
    the game should include a game board with a grid, a score display, and
a reset button \
    Code should be html, css and javascript, in a single file named
index.html. \
```

```
    Output will be markdown.  "

export BINDIR=../bin
make -C ../cmd

rm -rf tetris && mkdir tetris
echo $design | \
$BINDIR/sqirvy-cli plan -m gemini-1.5-flash           | tee tetris/plan.md
| \
$BINDIR/sqirvy-cli code -m claude-3-5-sonnet-latest    | tee
tetris/index.html | \
$BINDIR/sqirvy-cli review -m gpt-4o-mini                    review
>tetris/review.md

python -m http.server 8080 --directory tetris &

xdg-open http://localhost:8080
```

Sqirvy-ai Command Line Program

The primary executable is **bin/sqirvy-cli**.

Build

```
# cd to top level of product
# ===== Release
$>make clean
$>make debug
$>make test
$>make release

# ===== Debug and Test
$>make debug
$>make test
```

SDK Library

SDK Documentation is in pkg/sqirvy/README.md

The SDK is in directory pkg/sqirvy. It is a very simple interface that allows you to query a provider with a prompt and get a response. It supports Anthropic, Gemini, and OpenAI providers through the 'client' interface. Here is an example of how to use the API in a command line program. Examples for the other providers are in the 'cmd' directory.

- Making a query to a provider
    - Create a new client for the provider you want to use
        - sqirvy.NewClient(sqirvy.)
        - anthropic, gemini or openai

    - Make the query with a prompt, either from stdin or a file argument, and the model name,
        - client.QueryText(prompt, model string, options Options) (string, error)
    - Get the response
    - Handle any errors

Here's and example of very simple program that will perform a fixed query, using the NewClient and QueryText functions.

```
package main

import (
    fmt
    log

    sqirvy sqirvy-ai/pkg/sqirvy
)

func main() {
    // Create a new Anthropic client
    client, err := sqirvy.NewClient(sqirvy.Anthropic)
    if err != nil {
        log.Fatalf(Failed to create client: %v, err)
    }

    // Make the query with a prompt, the model name, and any options
(nothing supported yet)
    response, err := client.QueryText(say hello world, claude-3-5-haiku-
lates, sqirvy.Options{})
    if err != nil {
        log.Fatalf(Query failed: %v, err)
    }

    fmt.Println(Response:, response)
}
```

Examples

Example code is in directory **examples**. To use them, first build the binaries.

Build The Executables

- the build system uses GNU 'make'
- 'make' can be run from top level or from the cmd or web directories
- build (or default)
    - build the binaries for the cmd and web directories
    - it attempts to build the version for the current OS and CPU Architecture. Has been tested on Ubuntu Linux and Windows 11. Not tested on MacOS x86 or Apple silicon
    - after a `make` or `make test`, the binaries will be in the top level `bin` directory
- test

    - run the tests
- clean
    - remove the binaries an clanup temporary files

Examples

Simple hard coded queries using the specified provider:

- examples/anthropic
- examples/gemini
- examples/llama
- examples/openai

Examples for the various -f flags

- examples/sqirvy-query : generic chat query
- examples/sqirvy-plan : generate a plan for an application
- examples/sqirvy-code : generate code for an application
- examples/sqirvy-review : review existing code
- examples/sqirvy-scrape : scrape a web page and summarize it

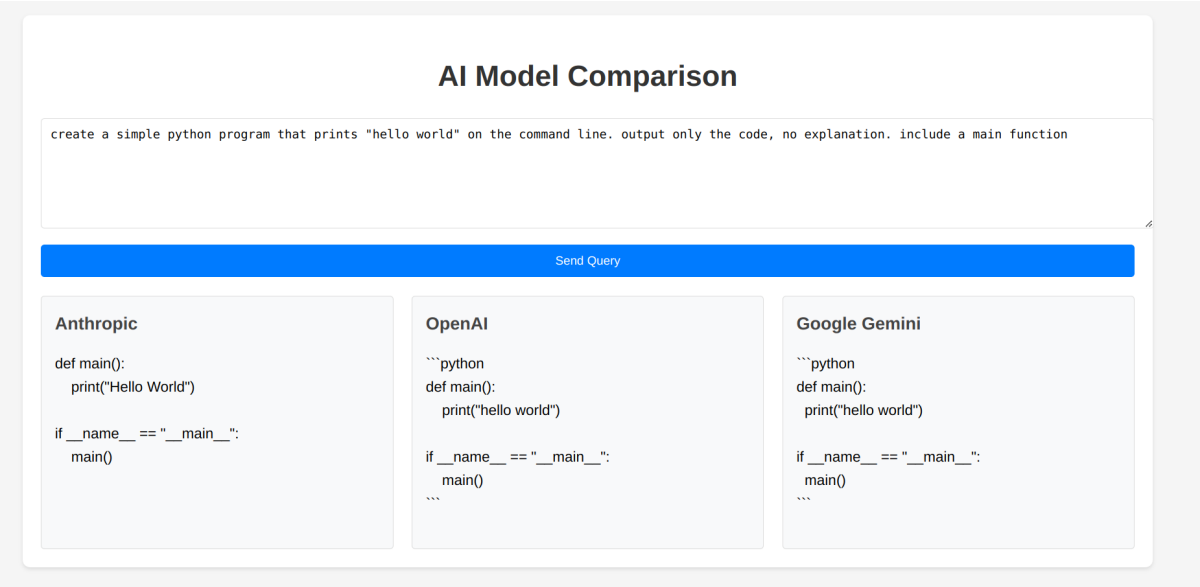
Example web app

- examples/web : for comparing results of queries from 3 different models

web/sqirvy-web

A simple web app that allows you to query all three providers in parallel and compare the results.

- cd into web/sqirvy-web
- go run .
- it will start a web server on port 8080.



The code for the web app was generated using Aider and the claude-3-5-sonnet-latest model.

CLients

Anthropic

- Anthropic
- this SDK is a Go native client for the Anthropic API
- this SDK is the one recommeded by Anthropic for Go.
- It's in alpha now but seems to work without problems for these use cases.
- Environment Variables Required:
    - export ANTHROPIC_API_KEY=

Gemini

- Gemini
- this is the official Go client for the Gemini API supported by Google
- **The Gemini SDK requires a GEMINI_API_KEY environment variable to authenticate**
- Environment Variables REquired:
    - export GEMINI_API_KEY=

OpenAI

- OpenAI
- Uses OpenAI HTTP API directly
- **The OpenAI API HTTP API requires a OPENAI_API_KEY environment variable to authenticate**
- **If you connecting to an OpenAI model to a server besides the official OpenAI servers, you will need to set the OPENAI_BASE_URL environment variable to the base URL of the server you are connecting to**
- Environment Variables REquired:
    - export OPENAI_API_KEY=
    - export OPENAI_BASE_URL=https://api.openai.com/v1/chat/completions

Llama

- Meta-LLAMA

DeepSeek

- DeepSeek
- Uses OpenAI HTTP API directly,
- **The API requires a DEEPSEEK_API_KEY and DEEPSEEK_BASE_URL environment variables to authenticate**
- Deepseek was tested using the LLAMA API Provider